



160

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/687,528

DATE: 05/01/2003

TIME: 13:15:57

Input Set : A:\EP.txt

Output Set: N:\CRF4\05012003\1687528.raw

```
3 <110> APPLICANT: Stern, David M
             Schmidt, Anne Marie
             Marso, Steven
             Topol, Eric
             Lincoff, A. Michael
     9 <120> TITLE OF INVENTION: A Method for Inhibiting New Tissue Growth in Blood Vessels
in a Patient
    10
             Subjected to Blood Vessel Injury
    12 <130> FILE REFERENCE: 0575-62096/JPW/AJM/AAB
    14 <140> CURRENT APPLICATION NUMBER: 09/687,528
    15 <141> CURRENT FILING DATE: 2000-10-13
    17 <160> NUMBER OF SEQ ID NOS: 6
    19 <170> SOFTWARE: PatentIn version 3.1
                                                                ENTERED
    21 <210> SEQ ID NO: 1
    22 <211> LENGTH: 416
    23 <212> TYPE: PRT
    24 <213> ORGANISM: Cow
    26 <400> SEQUENCE: 1
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    36 Pro Leu Val Leu Asn Cys Lys Gly Ala Pro Lys Lys Pro Pro Gln Gln
    40 Leu Glu Trp Lys Leu Asn Thr Gly Arg Thr Glu Ala Trp Lys Val Leu
    44 Ser Pro Gln Gly Asp Pro Trp Asp Ser Val Ala Arg Val Leu Pro Asn
                           70
                                               75
    48 Gly Ser Leu Leu Pro Ala Val Gly Ile Gln Asp Glu Gly Thr Phe
    49
    52 Arg Cys Arg Ala Thr Ser Arg Ser Gly Lys Glu Thr Lys Ser Asn Tyr
                   100
                                       105
    56 Arg Val Arg Val Tyr Gln Ile Pro Gly Lys Pro Glu Ile Val Asp Pro
                                   120
               115
    60 Ala Ser Glu Leu Met Ala Gly Val Pro Asn Lys Val Gly Thr Cys Val
                               135
    64 Ser Glu Gly Gly Tyr Pro Ala Gly Thr Leu Asn Trp Leu Leu Asp Gly
                           150
                                               155
    68 Lys Thr Leu Ile Pro Asp Gly Lys Gly Val Ser Val Lys Glu Glu Thr
                                           170
                       165
    72 Lys Arg His Pro Lys Thr Gly Leu Phe Thr Leu His Ser Glu Leu Met
                   180
                                       185
    76 Val Thr Pro Ala Arg Gly Gly Ala Leu His Pro Thr Phe Ser Cys Ser
```

200

Input Set : A:\EP.txt

| 80 Phe Thr Pro Gly Leu Pro Arg Arg Ala Leu His Thr Ala Pro Ile 81 210 215 220 | |
|--|--------------|
| 84 Gln Leu Arg Val Trp Ser Glu His Arg Gly Gly Glu Gly Pro Asn Val | |
| 85 225 230 235 240 | |
| 88 Asp Ala Val Pro Leu Lys Glu Val Gln Leu Val Val Glu Pro Glu Gly 89 245 250 255 | |
| 92 Gly Ala Val Ala Pro Gly Gly Thr Val Thr Leu Thr Cys Glu Ala Pro | |
| 93 260 265 270 | |
| 96 Ala Gln Pro Pro Pro Gln Ile His Trp Ile Lys Asp Gly Arg Pro Leu 97 275 280 285 | |
| 100 Pro Leu Pro Pro Gly Pro Met Leu Leu Leu Pro Glu Val Gly Pro Glu | |
| 101 290 295 300 | |
| 104 Asp Gln Gly Thr Tyr Ser Cys Val Ala Thr His Pro Ser His Gly Pro | |
| 105 305 310 315 320 | |
| 108 Gln Glu Ser Arg Ala Val Ser Val Thr Ile Ile Glu Thr Gly Glu Glu | |
| 109 325 330 335 | |
| 112 Gly Thr Thr Ala Gly Ser Val Glu Gly Pro Gly Leu Glu Thr Leu Ala | |
| 113 340 345 350 | |
| 116 Leu Thr Leu Gly Ile Leu Gly Gly Leu Gly Thr Val Ala Leu Leu Ile | |
| 117 355 360 365 | |
| 120 Gly Val Ile Val Trp His Arg Arg Gln Arg Lys Gly Gln Glu Arg 121 370 375 380 | |
| 121 370 373 360 124 Lys Val Pro Glu Asn Gln Glu Glu Glu Glu Glu Arg Ala Glu Leu | |
| 124 Bys var P10 Gra Ash Gra Gra Gra Gra Gra Gra Arg Ara Gra Lea 125 385 390 395 400 | |
| 128 Asn Gln Pro Glu Glu Pro Glu Ala Ala Glu Ser Ser Thr Gly Gly Pro | |
| 129 405 410 415 | |
| 132 <210> SEQ ID NO: 2 | |
| 133 <211> LENGTH: 1426 | |
| 134 <212> TYPE: DNA | |
| 135 <213> ORGANISM: Cow | |
| 137 <400> SEQUENCE: 2 | |
| 138 cggagaagga tggcagcagg ggcagtggtc ggagcctgga tgctagtcct cagtctgggg | 60 |
| 140 gggacagtca cgggggacca aaacatcaca gcccggatcg ggaagccact ggtgctgaac | 120 |
| 142 tgcaagggag cccccaagaa accaccccag cagctggaat ggaaactgaa cacaggccgg | 180 |
| 144 acagaagett ggaaagteet gteteeccag ggagaeeeet gggatagegt ggetegggte | 240 |
| 146 ctccccaacg gctccctcct cctgccggct gttgggatcc aggatgaggg gactttccgg | 300 |
| 148 tgccgggcaa cgagccggag cggaaaggag accaagtcta actaccgagt ccgagtctat | |
| 150 cagatteetg ggaagecaga aattgttgat eetgeetetg aacteatgge tggtgteece | 420 |
| 152 aataaggtgg ggacatgtgt gtccgagggg ggctaccctg cagggactct taactggctc | 480 |
| 154 ttggatggga aaactctgat tcctgatggc aaaggagtgt cagtgaagga agagaccaag | |
| 156 agacacccaa agacagggct tttcacgctc cattcggagc tgatggtgac cccagctcgg | 600 |
| 158 ggaggagete tecaceceae etteteetgt agetteaece etggeettee eeggegeega | 660 |
| 160 gccctgcaca cggccccat ccagctcagg gtctggagtg agcaccgagg tggggagggc | 720 |
| 162 cccaacgtgg acgctgtgcc actgaaggaa gtccagttgg tggtagagcc agaaggggga | 780 |
| 164 gcagtagctc ctggtggtac tgtgaccttg acctgtgaag cccccgccca gccccacct | 840 |
| 166 caaatccact ggatcaagga tggcaggccc ctgccccttc cccctggccc catgctgctc | 900 |
| 168 ctcccagagg tagggcctga ggaccaggga acctacagtt gtgtggccac ccatcccagc | 960 |
| 170 catgggcccc aggagagccg tgctgtcagc gtcacgatca tcgaaacagg cgaggagggg | 1020 1080 |
| 172 acgactgcag gctctgtgga agggccgggg ctggaaaccc tagccctgac cctggggatc | 1000 |

Input Set : A:\EP.txt

| 176 178 180 182 184 187 | ctgggaggcc tggggacagt cgccctgctc attggggtca tcgtgtggca tcgaaggcgg caacgcaaag gacaggagag gaaggtcccg gaaaaccagg aggaggaaga ggaggagaga gcggaactga accagccaga ggagcccgag gcggcagaga gcagcacagg agggccttga ggagcccacg gccagacccg atccatcagc cccttttctt ttcccacaat ctgttctggc cccagaccag ttctcctctg tataatctcc agcccacatc tcccaaactt tcttccacaa ccagagcctc ccacaaaaag tgatgagtaa acacctgcca cattta | | | | | | | | | | | | | 1140 1200 1260 1320 1380 1426 | | | |
|--|--|-------|-------|------------------|------|-------------|-------------|-------------|--------|-------------|--------|--------------|-------------|--|-------|----------|--|
| | | | RGAN: | | Huma | an | | | | | | | | | | | |
| | | | EQUE | | | | | | | | | | | | | | |
| | | | | | | Ala | Val | Gly | Ala | Trp | Val | Leu | Val | Leu | Ser | Leu | |
| 195 | _ | | | 1 | 5 | | | • • | | 10 | | | | | 15 | | |
| 198 | Trp | Gly | Ala | Val | Val | Gly | Ala | Gln | Asn | Ile | Thr | Ala | Arg | Ile | Gly | Glu | |
| 199 | - | - | | 20 | | - | | | 25 | | | | _ | 30 | _ | | |
| | Pro | Leu | Val | Leu | Lys | Cys | Lys | Gly | Ala | Pro | Lys | Lys | Pro | Pro | Gln | Arg | |
| 203 | | | 35 | | _ | _ | _ | 40 | | | _ | - | 45 | | | _ | |
| 206 | Leu | Glu | Trp | Lys | Leu | Asn | Thr | Gly | Arg | Thr | Glu | Ala | Trp | Lys | Val | Leu | |
| 207 | | 50 | | | | | 55 | | | | | 60 | | | | | |
| 210 | Ser | Pro | Gln | Gly | Gly | Gly | Pro | Trp | Asp | Ser | Val | Ala | Arg | Val | Leu | Pro | |
| 211 | | | | | | 70 | | | | | 75 | | | | | 80 | |
| | Asn | Gly | Ser | Leu | | Leu | Pro | Ala | Val | | Ile | Gln | Asp | Glu | | Ile | |
| 215 | | | | | 85 | | | | | 90 | | _ | _ | | 95 | | |
| | Phe | Arg | Cys | _ | Ala | Met | Asn | Arg | | Gly | Lys | Glu | Thr | Lys | Ser | Asn | |
| 219 | _ | _ | | 100 | | _ | | | 105 | -1 | _ | _ | | 110 | | _ | |
| | Tyr | Arg | | Arg | Val | Tyr | GIn | | Pro | СТĀ | Lys | Pro | | Ile | vaı | Asp | |
| 223 | a | . 1 . | 115 | 01 | T | m1 | 31 <u>-</u> | 120 | 77 m 1 | D | 7 | T | 125 | a 1 | mh m | C | |
| 226 | ser | 130 | ser | GIU | ьeu | THE | 135 | GIY | Val | PIO | ASII | 140 | Val | Gly | 1111 | Cys | |
| | Val | | Glu | Gl ₃₇ | Sor | тиг | | λla | C1 v | Фhr | T.au | | Trn | His | T.A11 | Δen | |
| | 145 | 261 | GIU | GIY | Ser | 150 | FIO | AIU. | СТУ | 1111 | 155 | SCI | 115 | nrs | пец | 160 | |
| | | Lvs | Pro | Leu | Va 1 | | Asn | Glu | Lvs | Glv | | Ser | Va l | Lys | Glu | | |
| 235 | O = 1 | | | | 165 | | | | -10 | 170 | | | | _1_ | 175 | | |
| | Thr | Arq | Arq | His | | Glu | Thr | Gly | Leu | | Thr | Leu | Gln | Ser | | Leu | |
| 239 | | , | , | 180 | | | | _ | 185 | | | | | 190 | | | |
| | Met | Val | Thr | Pro | Ala | Arg | Gly | Gly | Asp | Pro | Arg | Pro | Thr | Phe | Ser | Cys | |
| 243 | | | 195 | | | _ | _ | 200 | | | _ | | 205 | | | _ | |
| 246 | Ser | Phe | Ser | Pro | Gly | Leu | Pro | Arg | His | Arg | Ala | Leu | Arg | Thr | Ala | Pro | |
| 247 | | 210 | | | | | 215 | | | | | 220 | | | | | |
| 250 | Ile | Gln | Pro | Arg | Val | ${\tt Trp}$ | Glu | ${\tt Pro}$ | Val | ${\tt Pro}$ | Leu | Glu | Glu | Val | Gln | Leu | |
| | 225 | | | | | 230 | | | | | 235 | | | | | 240 | |
| | Val | Val | Glu | Pro | | ${\tt Gly}$ | Gly | Ala | Val | | Pro | Gly | Gly | Thr | | Thr | |
| 255 | | | | | 245 | | | | | 250 | | | | | 255 | | |
| | Leu | Thr | Cys | | Val | Pro | Ala | Gln | | Ser | Pro | Gln | Ile | His | Trp | Met | |
| 259 | _ | _ | | 260 | _ | _ | _ | _ | 265 | _ | | _ | | 270 | | - | |
| | ГÀЗ | Asp | _ | Val | Pro | Leu | Pro | | Pro | Pro | Ser | Pro | | Leu | тте | Leu | |
| 263 | Dres | C1 | 275 | C1 | Dwa | C1 - | A | 280 | C1 | mk ~ | m | C.~ | 285 Crra | 37 n T | λ 1 ÷ | | |
| | PLO | 290 | тте | стХ | PLO | GIII | 295 | GIII | стА | T III. | T À T. | 300 | Cys | Val | HIG | THE | |
| 267 | | 230 | | | | | 433 | | | | | 200 | | | | | |

Input Set : A:\EP.txt

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270 His Ser Ser His Gly Pro Gln Glu Ser Arg Ala Val Ser Ile Ser Ile
271 305
274 Ile Glu Pro Gly Glu Glu Gly Pro Thr Ala Gly Ser Val Gly Gly Ser
                   325
                                       330
                                                           335
275
278 Gly Leu Gly Thr Leu Ala Leu Ala Leu Gly Ile Leu Gly Gly Leu Gly
279
                340
                                   345
282 Thr Ala Ala Leu Leu Ile Gly Val Ile Leu Trp Gln Arg Arg Gln Arg
283
                               360
286 Arg Gly Glu Glu Arg Lys Ala Pro Glu Asn Gln Glu Glu Glu Glu Glu
                           375
287
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                                               380
290 Arg Ala Glu Leu Asn Gln Ser Glu Glu Pro Glu Ala Gly Glu Ser Ser
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                                           395
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298 <210> SEQ ID NO: 4
299 <211> LENGTH: 1391
300 <212> TYPE: DNA
301 <213> ORGANISM: Human
303 <400> SEQUENCE: 4
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306 gtaggtgctc aaaacatcac agcccggatt ggcgagccac tggtgctgaa gtgtaagggg
                                                                        120
                                                                        180
308 gcccccaaga aaccacccca gcggctggaa tggaaactga acacaggccg gacagaagct
                                                                        240
310 tggaaggtee tgteteecea gggaggagge eeetgggaea gtgtggeteg tgteetteee
312 aacggetece tetteettee ggetgteggg atceaggatg aggggatttt ceggtgeagg
                                                                        300
314 gcaatgaaca ggaatggaaa ggagaccaag tccaactacc gagtccgtgt ctaccagatt
                                                                        360
316 cctgggaage cagaaattgt agattetgee tetgaactea eggetggtgt teccaataag
                                                                        420
318 gtggggacat gtgtgtcaga gggaagctac cctgcaggga ctcttagctg gcacttggat
                                                                        480
320 gqqaaqcccc tqqtqcctaa tqaqaaqqqa qtatctqtqa agqaacaqac caqqaqacac
                                                                        540
322 cctgagacag ggctcttcac actgcagtcg gagctaatgg tgaccccagc ccggggagga
                                                                        600
324 gateceeqte ceaeettete etgtagette ageceaggee tteeceegaca eegggeettg
                                                                        660
326 cgcacagece ceatecagee eegtgtetgg gageetgtge etetggagga ggtecaattg
                                                                        720
328 gtggtggagc cagaaggtgg agcagtagct cctggtggaa ccgtaaccct gacctgtgaa
                                                                        780
330 gtccctgccc agccctctcc tcaaatccac tggatgaagg atggtgtgcc cttgcccctt
                                                                        840
                                                                        900
332 ecceecagee etgtgetgat ecteectgag atagggeete aggaceaggg aacetaeage
334 tgtgtggcca cccattccag ccacgggccc caggaaagcc gtgctgtcag catcagcatc
                                                                        960
336 atcgaaccag gcgaggaggg gccaactgca ggctctgtgg gaggatcagg gctgggaact
                                                                       1020
338 ctagccctgg ccctggggat cctgggaggc ctggggacag ccgccctgct cattggggtc
                                                                       1080
1140
342 gaagaggagg agcgtgcaga actgaatcag tcggaggaac ctgaggcagg cgagagtagt
                                                                       1200
344 actggaggge ettgagggge ceacagaeag ateceateea teageteeet tttetttte
                                                                       1260
346 ccttgaactg ttctggcctc agaccaactc tctcctgtat aatctctctc ctgtataacc
                                                                       1320
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353 <210> SEQ ID NO: 5
354 <211> LENGTH: 403
355 <212> TYPE: PRT
356 <213> ORGANISM: Mouse
358 <400> SEQUENCE: 5
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Input Set : A:\EP.txt

| 364 365 | Trp | Gly | Ala | Val 20 | Ala | Gly | Gly | Gln | Asn 25 | Ile | Thr | Ala | Arg | Ile 30 | Gly | Glu |
|------------|--------|-----------|--------------|------------|-------------|-----------|----------------|------------|------------|----------------|-----------|----------------|------------|------------|------------|-----------|
| | Pro | Leu | Val | Leu | Ser | Cys | Lys | Gly 40 | Ala | Pro | Lys | Lys | Pro 45 | Pro | Gln | Gln |
| 372 | Leu | | | Lys | Leu | Asn | Thr 55 | - • | Arg | Thr | Glu | Ala 60 | | Lys | Val | Leu |
| | | 50 Pro | Gln | Gly | Gly | | | Asp | Ser | Val | | | Ile | Leu | Pro | |
| 377 | 65 | Cor | T OU | T OU | Lou | 70 Bro | בוג | mhr. | Clv | T10 | 75 Val | λαη | Clu | Gly | mhr. | 80 Bho |
| 381 | | | | | 85 | | | | | 90 | | | | | 95 | |
| 384 385 | Arg | Cys | Arg | Ala 100 | Thr | Asn | Arg | Arg | Gly 105 | Lys | Glu | Val | Lys | Ser 110 | Asn | Tyr |
| 388 389 | Arg | Val | Arg 115 | Val | Tyr | Gln | Ile | Pro 120 | Gly | Lys | Pro | Glu | Ile 125 | Val | Asp | Pro |
| | Ala | Ser | | Leu | Thr | Ala | Ser | | Pro | Asn | Lys | Val | | Thr | Cys | Val |
| 393 | | 130 | | | | | 135 | | | | | 140 | | | | |
| | | Glu | Gly | Ser | Tyr | | Ala | Gly | Thr | Leu | | Trp | His | Leu | Asp | |
| | 145 | _ | _ | | _ | 150 | | _ | ~ 1 | _, | 155 | 3 | _ | ~ 7 | a 3 | 160 |
| 400 | Lys | Leu | Leu | He | Pro 165 | Asp | GLY | Lys | GLu | Thr 170 | Leu | Val | Lys | Glu | G1u 175 | Thr |
| | λτα | Δτα | Иiс | Dro | | ጥh r | Glv | T.011 | Dhe | | T.011 | Δra | Ser | Glu | | Thr |
| 405 | mrg | nra | 1115 | 180 | Olu | 1111 | O ₁ | Lea | 185 | 1111 | шси | **** 9 | DCI | 190 | Dea | **** |
| 408 | Val | Ile | Pro | Thr | Gln | Gly | Gly | Thr | Thr | His | Pro | Thr | Phe | Ser | Cys | Ser |
| 409 | | | 195 | | | | | 200 | | | | | 205 | | | |
| 412 | Phe | Ser | Leu | Gly | Leu | Pro | Arg | Arg | Arg | Pro | Leu | Asn | Thr | Ala | Pro | Ile |
| 413 | | 210 | | | | | 215 | | | | | 220 | | | | |
| | | Leu | Arg | Val | Arg | | Pro | Gly | Pro | Pro | | Gly | Ile | Gln | Leu | |
| 417 | | ~1 | | a 1 | a 1 | 230 | -1 | ** - 1 | | | 235 | a 1 | m1 | **- 1 | m1 | 240 |
| 420 | vaı | GIU | Pro | GIU | 245 | GIY | тте | vaı | Ата | 250 | СТА | СТА | Thr | Val | 255 | Leu |
| | Thr | Cvs | Δla | Tle | | Δla | Gln | Pro | Pro | | Gln | Val | His | Trp | | Lvs |
| 425 | | 0,10 | | 260 | 001 | | 02 | | 265 | | 0 | , | | 270 | | _10 |
| | Asp | Gly | Ala | Pro | Leu | Pro | Leu | Ala | Pro | Ser | Pro | Val | Leu | Leu | Leu | Pro |
| 429 | _ | _ | 275 | | | | | 280 | | | | | 285 | | | |
| 432 | Glu | | Gly | His | Ala | Asp | | Gly | Thr | \mathtt{Tyr} | Ser | Cys | Val | Ala | Thr | His |
| 433 | | 290 | | | | | 295 | _ | _ | _ | - | 300 | | _ | • | |
| | | Ser | His | Gly | Pro | | Glu | Ser | Pro | Pro | | Ser | Ile | Arg | Val | |
| 437 | | m1 | a 1 . | | a 1. | 310 | 5 | | a 1 | a 1 | 315 | 17- 1 | a 1 | 01 | a | 320 |
| 440 | GIU | Thr | GIY | Asp | 325 | GIY | Pro | Ата | GIU | 330 | ser | vaı | GIĀ | Glu | 335 | GIA |
| | T.e.11 | Glv | Thr | T.e.11 | | T.e.11 | Δla | T.eu | Glv | | Len | Glv | Glv | Leu | | Va 1 |
| 445 | шси | OI, | 1 | 340 | mu | | 1114 | | 345 | | шси | O ₁ | OI, | 350 | OI, | · u _ |
| | Val | Ala | Leu | | Val | Glv | Ala | Ile | | Trp | Ara | Lvs | Ara | Gln | Pro | Ara |
| 449 | | | 355 | | | _ | | 360 | | • | , | - | 365 | | | , |
| | Arg | Glu | Glu | Arg | Lys | Ala | Pro | Glu | Ser | Gln | Glu | Asp | Glu | Glu | Glu | Arg |
| 453 | - | 370 | | - | _ | | 375 | | | | | 380 | | | | - |
| 456 | Ala | Glu | Leu | Asn | Gln | Ser | Glu | Glu | Ala | Glu | Met | ${\tt Pro}$ | Glu | Asn | Gly | Ala |
| 457 | | | | | | 390 | | | | | 395 | | | | | 400 |
| 460 | Gly | Gly | Pro | | | | | | | | | | | | | |

VERIFICATION SUMMARY

DATE: 05/01/2003

PATENT APPLICATION: US/09/687,528

TIME: 13:15:58

Input Set : A:\EP.txt